I CLAIM:

1. A bonded structure, comprising:
an oxidizable substrate,
a body to be secured to said substrate, and
a reacted borosilicate mixture (RBM) securing said body relative to said substrate by an oxide interface with the substrate.

2. The bonded structure of claim 1, wherein said RBM extends between said body and said substrate.

3. The bonded structure of claim 2, wherein the RBM between said body and said substrate is thin enough to be substantially thermally conductive and said body comprises a thermal sensor.

4. The bonded structure of claim 1, wherein said body directly contacts said substrate.

5. The bonded structure of claim 1, wherein said RBM encapsulates said body relative to said substrate.

6. The bonded structure of claim 1, wherein said RBM extends over the edges of said body and leaves a portion of said body exposed.

7. The bonded structure of claim 1, wherein said body is oxidizable, and an oxide interface secures said RBM to said body.

8. The bonded structure of claim 1, wherein said body is substantially non-oxidizable.

9. The bonded structure of claim 1, said RBM comprising a reacted mixture of B_2O_3 and SiO_2, with said B_2O_3 at least 50wt.% of said mixture.

10. The bonded structure of claim 9, wherein said B_2O_3 is at least 70wt.% of said mixture.

11. The bonded structure of claim 1, wherein said body comprises an environmental sensor having an electrical output.

12. The bonded structure of claim 11, further comprising at least one lead wire for said sensor secured

relative to said substrate by a lead wire RBM along at least a portion of its length.

13. The bonded structure of claim 12, wherein said lead wire RBM and the RBM for said sensor comprise a continuous RBM layer.

14. The bonded structure of claim 12, wherein said lead wire RBM extends between each of said lead wires and said substrate.

15. The bonded structure of claim 11, further comprising an array of additional sensors secured to said substrate by an RBM.

16. The bonded structure of claim 15, further comprising a plurality of lead wires for said sensors secured relative to said substrate by a lead wire RBM along at least a portion of their lengths.

17. The bonded structure of claim 16, wherein said lead wire RBM insulates said lead wires from each other.

18. The bonded structure of claim 17, wherein said lead wires are disposed on a single common level relative to said substrate.

19. The bonded structure of claim 17, wherein said lead wires are disposed in a multi-layer bundle relative to said substrate.

20. A lead wire system, comprising:

a substrate,

at least one electrically conductive lead wire, and

a reacted borosilicate mixture (RBM) securing each of said lead wires relative to said substrate for at least a portion of their lengths.

21. The lead wire system of claim 20, wherein said substrate is oxidizable, and said RBM secures said lead wires to said substrate by an oxide interface with this substrate.

22. The lead wire system of claim 20, wherein said RBM extends between said lead wire and said substrate.

23. The lead wire system of claim 20, comprising a plurality of said lead wires.

24. The lead wire system of claim 23, wherein at least some of said lead wires are adjacent to each other and insulated from each other by said RBM.

25. The lead wire system of claim 23, wherein said lead wires are disposed on a single common level relative to said substrate.

26. The lead wire system of claim 23, wherein said lead wires are disposed in a multi-layer bundle relative to said substrate.

27. The lead wire system of claim 23, wherein said lead wires and said RBM extend to the edge of said substrate.

28. The lead wire system of claim 23, further comprising a terminal block for said lead wires.

29. The lead wire system of claim 28, wherein said terminal block is on said substrate.

30. The lead wire system of claim 28, wherein said terminal block is off said substrate.

31. An environmental sensing system, comprising:

a substrate,

an environmental sensor adjacent to said substrate, and

a reacted borosilicate mixture (RBM) extending over said sensor and at least a portion of said substrate adjacent to said sensor to secure said sensor relative to said substrate.

32. The sensing system of claim 31, wherein said RBM extends between said sensor and said substrate.

33. The sensing system of claim 31, wherein said substrate is oxidizable and said RBM secures said sensor to said substrate by an oxide interface with the substrate.

34. The sensing system of claim 31, said RBM comprising a reacted mixture of B_2O_3 and SiO_2, with said B_2O_3 at least 50wt.% of said mixture.

35. The sensing system of claim 31, further comprising at least one lead wire for said sensor secured

relative to said substrate by a lead wire RBM along at least a portion of its length.

36. The sensing system of claim 31, further comprising an array of additional sensors secured to said substrate by an RBM.

37. The sensing system of claim 31, wherein said RBM encapsulates said sensor relative to said substrate.

38. An environmental sensing system, comprising:

a substrate,

an environmental sensor,

an output facility for providing a response to signals from said sensor,

at least one lead wire connecting said sensor to said output facility, and

a reacted borosilicate mixture (RBM) at least partially encapsulating said sensor and lead wires and securing them relative to said substrate.

39. The sensing system of claim 38, wherein said substrate is oxidizable and said RBM secures said sensor and lead wires to said substrate by an oxide interface with the substrate.

40. The sensing system of claim 38, said RBM comprising a reacted mixture of B_2O_3 and SiO_2, with said B_2O_3 at least 70wt.% of said mixture.

41. The sensing system of claim 38, further comprising an array of additional sensors at least partially encapsulated and secured relative to said substrate by an RBM, and respective lead wires for said additional sensors encapsulated and secured relative to said substrate by a lead wire RBM along at least a portion of their lengths and connecting their respective sensors to said output facility.

42. The sensing system of claim 41, wherein said lead wire RBM insulates said lead wires from each other.

43. A method of securing a body to a substrate, comprising:

placing said body on said substrate,

coating at least a portion of said body and at least a portion of said substrate adjacent to said body with a borosilicate mixture (BM), and

reacting said BM at an elevated temperature to secure said body relative to said substrate.

44. The method of claim 43, wherein said substrate is oxidizable, and said reaction step forms an oxide interface between said BM and substrate.

45. The method of claim 43, said body comprising an environmental sensor having an electrical output, further comprising the steps of placing at least one lead wire for said sensor on said substrate in electrical contact with said sensor, coating at least a portion of the length of said lead wires along said substrate with said BM, and reacting the BM on the coated portion of said wires along with the BM on said sensor to secure said lead wire portion relative to said substrate.

46. The method of claim 45, wherein a BM layer is provided on said substrate prior to placing said lead wires, said lead wires are placed on the substrate with said BM layer between them and the substrate, and said BM layer is reacted along with the BM coating said sensor and lead wires to encapsulate said lead wires and insulate them from each other with reacted BM (RBM).

47. The method of claim 46, wherein a shaped form is applied over the BM coating said lead wires to space said lead wires from each other and hold them against the underlying BM layer during said reaction.

48. The method of claim 46, wherein said BM layer also extends under said sensor so that said sensor is encapsulated in RBM when said BM layer and BM coating are reacted.

49. The method of claim 43, said BM comprising a mixture of B_2O_3 and SiO_2.

50. The method of claim 49, said B_2O_3 comprising at least 50wt.% of said mixture.

51. The method of claim 49, wherein said BM is reacted at a temperature greater than 460°C.

52. An encapsulated package, comprising:

an oxidizable body, and

a reacted borosilicate mixture encapsulating said body and protecting it from reaction with an oxidizing atmosphere.

53. The package of claim 53, said RBM comprising a reacted mixture of B_2O_3 and SiO_2.

54. The package of claim 53, said B_2O_3 comprising at least 50wt.% of said mixture.

55. A method of encapsulating an oxidizable body to protect it from reaction with an oxidizing atmosphere, comprising:

coating at least a portion of said body with a borosilicate mixture (BM), and

reacting said BM at an elevated temperature to encapsulate said body.

56. The method of claim 55, said BM comprising a mixture of B_2O_3 and SiO_2.

57. The method of claim 56, said B_2O_3 comprising at least 50wt.% of said mixture.

58. The method of claim 56, wherein said BM is reacted at a temperature greater than 460°C.